

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of :
ENRIQUE DAVID SANCHO : Examiner
Serial No. To Be Assigned : Art Unit
Filed: HEREWITH :
For: A METHOD FOR SECURE : Date: July 30, 1999
NETWORK PURCHASING :
X

BOX PATENT APPLICATION
Assistant Commissioner of Patents
Washington, D.C. 20231

TRANSMITTAL LETTER

Dear Sir:

Enclosed herewith please find the following:

- [1] PROVISIONAL PATENT APPLICATION
- [2] 5 SHEETS OF DRAWINGS
- [3] Certification of EXPRESS Mailing
- [4] Return Receipt Postcard
- [5] Check for \$150.00

Respectfully submitted,



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PROVISIONAL PATENT APPLICATION

TO ALL WHOM IT MAY CONCERN:

**ENRIQUE DAVID SANCHO, of P.O. Box 1151, Zichron Yaacov, 30900, Israel, has
invented:**

A Method For Secure Network Purchasing

for which the following is a provisional application.

EL 17995 6 291US

A METHOD FOR SECURE NETWORK PURCHASING

FIELD OF THE INVENTION

The present invention relates to a method for implementing secure purchases over a computer network. More particularly, the method relates to a a system which permits purchases of merchandise to be made over a computer network, whereby the purchaser may feel confident that personal credit card information is not at risk of being stolen and the merchant may be more confident that the purchaser is bona fide.

BACKGROUND OF THE INVENTION

It is well known for buyers of merchandise to access the network commonly referred to as the Internet, a part of which is the World Wide Web, for the purpose of searching for and purchasing merchandise from on-line vendors selling wares ranging from travel services and investment services to buying CD recordings, books, software, computer hardware and the like. Most purchases are conducted in the following manner: a purchaser selects his merchandise and the vendor requests payment by one of several methods one of which includes payment by

providing credit card information. According to surveys and other marketing data, there always has been and there still exists a high percentage of the population which is deterred from purchasing merchandise directly over the Internet. This large population apparently fears that, despite all the efforts at security and cryptography promised by the vendors, there still exists the probability that their credit account information will be intercepted on-line by a third party computer hacker and used illegally, at great expense and trouble for the cardholder.

An additional anxiety-inducing factor related to merchandising over the Internet, or e-commerce, is that the merchant cannot always be certain that just because he has obtained credit card information, that he will actually be paid for the merchandise he ships. After all, credit card fraud and/or theft occurs regularly and may not be caught in time to stop the order from being shipped. When the cardholder discovers the theft and stops the card, it may be too late for the vendor to recover his property. At the very least, this situation leads to unnecessary aggravation and wasted resources for the merchant, credit card company and cardholder.

SUMMARY AND OBJECTS OF THE INVENTION

It is thus an objective of the present invention to provide a method for potential on-line buyers of merchandise marketed over the Internet to pay for those purchases without exposure to the risk of credit card theft by electronic interception.

It is a further objective of the invention to provide a mechanism for facilitating e-commerce which will increase the confidence of the consuming public in the safety of such transactions.

It is a further objective of the invention to provide a mechanism for facilitating e-commerce which will increase the confidence with which vendors may ship the purchased product or deliver the purchased service without fear of the payment being provided fraudulently.

These objectives and others and others not specifically enumerated herein are achieved by the invention disclosed herein which comprises a method for providing payment to an on-line merchant for services or goods provided to an on-line buyer. The method relies on the business relationships between the member computers which form the structure of the Internet. Generally speaking, the Internet is a network of computers, remote from one another, linked by a variety of communications lines including telephone lines, cable television lines, satellite link-ups and the like. Internet service providers (hereinafter "ISPs")

provide the link to the main backbone of the Internet for small end users. The account for the end user is established in the normal manner usually by providing credit card information to the ISP by conventional means, such as by voice telephony, fax transmission or check. In most ISP-end user relationships, the ISP has been given credit card information and this information is on file with the ISP and available to the ISP's computers. In return for receiving payment, the ISP provides a gateway to the Internet for the end-user's use. The end-user (or subscriber) is provided with software means and identification codes for dialling directly into the ISP's computers. The ISP's computers assign an Internet Protocol (hereinafter "IP") address to the subscriber for use during the particular on-line session in progress. The subscriber's computer transmits messages which are received by the ISP computer and relayed through the IP address and out onto the Internet to the ultimate intended recipient computer. During the entire time the on-line session in progress, the IP address does not change and is thus available as identifying information. By monitoring and occasionally re-verifying that the subscriber's computer is still on-line at the assigned IP address, the ISP can confirm that certain activities could be attributed to the subscriber.

The present invention takes advantage of the intimate relationship which is re-created every time an Internet subscriber's computer goes online and signs into his ISP's computer by assigning to the ISP computer the function of

clearinghouse and active intermediary between the subscriber's computer and the vendor's computer. A subscriber computer signs in to the ISP computer system and is recognized and assigned an IP address. When the subscriber identifies merchandise or services at a vendor's website which he wishes to purchase, he sends programming to the website which selects the items and instructs the vendor's computer to generate a purchase authorization request which is sent to the ISP computer. The purchase authorization request contains information about the merchandise to be purchased, identifying information about the proposed purchaser, some of which is the identifying information assigned by the ISP to the subscriber. The ISP confirms internally that the subscriber is still signed in to the ISP computer system by verifying the identity of the computer currently actively communicating through the IP address. When satisfied that the subscriber is still online, the ISP computer generates and sends a message to the subscriber's computer requesting confirmation of the order for the merchandise. Upon receipt from the subscriber's computer of the confirmation, the ISP generates and transmits to the vendor's computer a message confirming the order and providing a confirmation number, agreeing to pay the invoice which the vendor's computer subsequently generates and presents to the ISP computer. ISP computer then uses the subscriber's credit card information and presents an invoice against the credit card account to be sent through normal channels.

Brief Description Of The Drawings

For better understanding of the invention, the following drawings are included for consideration in combination with the detailed specification which follows:

Fig. 1 shows a buyer computer in communication with a vendor computer via the ISP computer, wherein buyer computer is initiating a purchase transaction;

Fig. 2 shows the vendor computer communicating with the ISP computer to request authorization to complete buyer's requested transaction;

Fig. 3 shows the ISP computer confirming that correct IP address is active with buyer's computer and requesting confirmation of buyer's transaction;

Fig. 4 shows buyers computer responding to ISP computer's request for confirmation; and

Fig. 5 shows ISP computer's transmission of a confirmation code and invoicing instructions to vendor's computer.

Detailed Description Of The Exemplary Embodiments

As was mentioned hereinabove, the account for the subscriber (also referred to as an end user or Buyer) is established in the normal manner usually by providing credit card information to the ISP by conventional means, such as by voice telephony, fax transmission or check. In most ISP-end user relationships, the ISP has been given credit card information and this information is on file with the ISP and available to the ISP's computers. In return for receiving payment, the ISP provides a gateway to the Internet for the end-user's use. The end-user (or subscriber) is provided with software means and identification codes for dialling directly into the ISP's computers. The ISP's computers assign an Internet Protocol (hereinafter "IP") address to the subscriber for use during the particular on-line session in progress. The subscriber's computer transmits messages which are received by the ISP computer and relayed through the IP address and out onto the Internet to the ultimate intended recipient computer. During the entire time the on-line session in progress, the IP address does not change and is thus available as identifying information. By monitoring and occasionally re-verifying that the subscriber's computer is still on-line at the assigned IP address, the ISP can confirm that certain activities could be attributed to the subscriber.

The present invention takes advantage of the intimate relationship which is re-created every time an Internet subscriber's computer goes online and signs into his ISP's computer by assigning to the ISP computer the function of clearinghouse and active intermediary between the subscriber's computer and the vendor's computer.

The method is described with reference to the drawings described hereinabove as follows:

The ISP (also referred to hereinafter as a "Clearinghouse Computer") is assigned a unique ISP-ID code.

As described hereinabove, the ISP's subscriber or customer (hereinafter "Buyer") has gained the ability to access the Internet network from his remote computer by opening an account with ISP.

The Buyer has provided credit card or other payment information to the ISP when the account was opened, by conventional mail, fax, voice telephony or any other acceptable method including known methods. In exchange, Buyer receives from the ISP certain software and identification codes which permit Buyer's computer to communicate with the ISP's computers and to negotiate (request and obtain) an IP address.

At time of first sign-on, Buyer's Computer (hereinafter referred to as "BC") transmits to BC a Buyer-ID code which is electronically recorded or written into a file (e.g. a cookie file) on BC. The Buyer ID code could be generated by any number of methods known in the art for generating identification codes.

When Buyer activates his BC to log onto ISP network (BC provides standard log-in information to ISP), ISP also reads and logs in Buyer-ID code and assigns IP address for current session to BC.

BC connects via ISP portal with Merchant Computer (MC) and Buyer selects desired merchandise and further selects to pay using SafeWWW payment method disclosed hereinbelow.

Buyer-ID and BC's IP address assigned for current session are provided to MC programmed to request and receive said information

MC is programmed to use Buyer-ID and BC's current IP address along with information such as desired Item ID, cost and name for generating an electronic purchase inquiry which is transmitted through the network to ISP.

ISP is programmed such that upon receipt of purchase inquiry from MC, ISP uses combination of IP address and Buyer-ID to determine within ISP's internal

network whether Buyer is in fact still online at the address assigned at the beginning of the online session.

If ISP computer is unable to confirm that BC is still connected to ISP system at the IP address expected, or that the BC IP address given by MC is different from that assigned by ISP to BC, then a negative message is generated by ISP's computer and transmitted to MC thereby resulting in the early termination of the purchase transaction process by MC. ISP's computer may alternatively be programmed to conduct other tests or inspect for other necessary conditions in an attempt to verify the source of the order placed with MC.

If BC is determined to be connected to ISP at correct address, ISP sends message containing details of purchase inquiry to BC asking Buyer to input confirmation of details of purchase desired to be transacted with MC.

Upon input of confirmation command by Buyer into BC, BC generates and transmits a confirmation to ISP.

On receipt of Buyer's confirmation, ISP then generates and transmits a Transaction Confirmation Number and instructs MC to proceed with filling Buyer's order and also to generate and forward an invoice to ISP.

The invoice to the ISP can be generated electronically and transmitted directly to ISP's computer, instantaneously (during the same session) or MC might wait until receiving programming indicating that the order has actually been filled.

Receipt of the invoice by ISP's computer then causes the ISP computer to generate and transmit, either electronically or through conventional means, an instruction to Buyer's credit card company to debit Buyer's account for the amount of the purchase. Alternatively, ISP could bill Buyer directly or any other reimbursement arrangement, e.g. through an insurance fund, is contemplated herein.

The examples discussed herein and demonstrated by the Figures are merely for illustrative purposes only. Variations and modifications of the disclosed invention in a manner well within the skill of the man of average skill in the art are contemplated and are intended to be encompassed within the scope and spirit of the invention as defined by the claims which follow.

A method of performing secure electronic transactions on a computer network, said network comprising a buying computer, an ISP computer and a vendor computer, including the steps of:

said buying computer communicating via said ISP computer with said vendor computer and allowing an operator to select merchandise or services for purchase;

vendor computer is programmed to use Buyer-ID and BC's current IP address along with information such as desired Item ID, cost and name for generating an electronic purchase inquiry which is transmitted to ISP computer;

whereby if buyer computer is determined to be connected to ISP computer at correct address, ISP computer then generates and transmits Transaction Confirmation Number and instructs MC to generate and forward invoice to ISP computer.

I am Mr. Smith
ID # 16495358-4379
IP 154.255.498.643
Purchase a Beatles Book, Item
number 6546/12
Price 30 \$



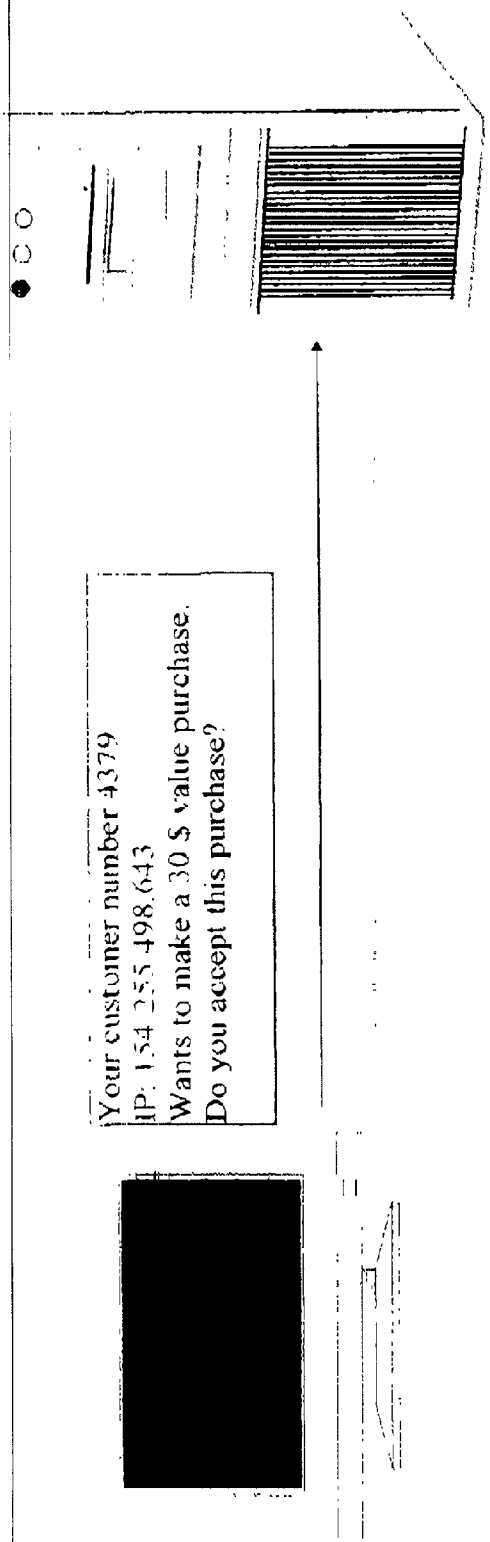
Pc at Home

Fig. 1

FIG. 2

Internet Service Provider (ISP)

Vendor



Your customer number 4379
IP: 154.255.498.643
Wants to make a 30 \$ value purchase.
Do you accept this purchase?



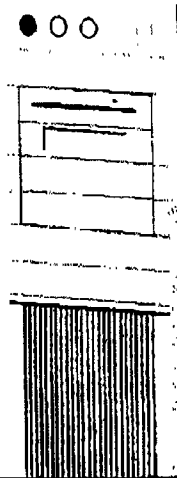
Pc at Home

Fig. 2

Amazon Shop (Vendor)



Internet Service Provider
(ISP)



Checking IP:.....
154.255.498.643
Mr. Smith do you accept a 30 \$
Value purchase that you made in the
Amazon Book shop?
If yes enter your Password.



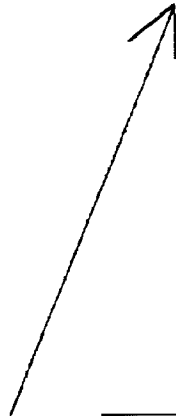
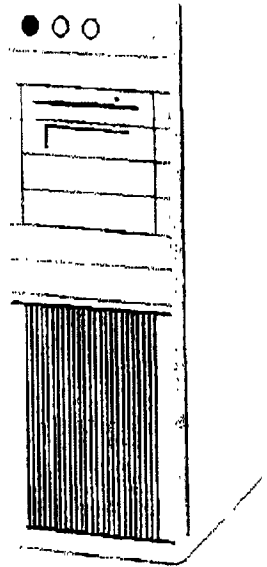
Pc at Home

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Amazon Shop (Vendor)



Internet Service Provider
(ISP)



Pc at Home

I do accept a 30 \$ value purchase that
I made in the Amazon Book Shop.
My password is *****

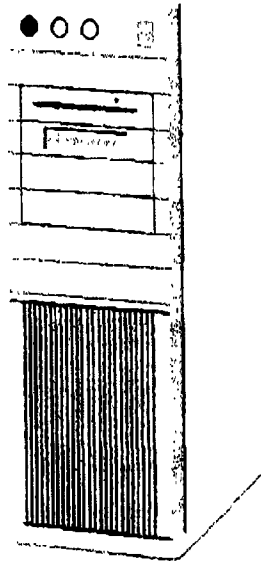
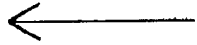
FIG 4

Amazon Shop (Vendor)



Internet Service Provider
(ISP)

Confirm transaction # 123456789
Send invoice to ISP # 16495358



Pc at Home

FIG. 5